

CLAIMS

1. A behavioural translator arranged for use by a behavioural controller of an object, the translator arranged to map information representing behaviour conforming to a first
5 demographic group to behaviour conforming to a second demographic group, the behavioural translator comprising:

means to receive input;

means to process said input to associate the received input with behaviour by the
object conforming to the first demographic group; and

10 means to map the behaviour derived from the received input to output generating behaviour conforming to the second demographic group.

2. A behavioural translator as claimed in claim 1, wherein a demographic group
comprises a nationality, religion, social class, occupation or social background.

15 3. A behavioural translator as claimed in claim 1 or 2, wherein the object is a virtual object participating in a virtual environment

4. A behavioural translator as claimed in claim 3, wherein the virtual object is arranged
20 to operate within a virtual environment comprising any one of the group of virtual environments consisting of:

a virtual computer game, a virtual on-line meeting, an on-line game, an on-line
chat-room, an avatar hosted meeting; an avatar counselling meeting; an avatar based
mediation environment; an avatar based sales environment; an on-line collaboration
25 environment; an on-line customer relationship management environment.

5. A behavioural translator as claimed in claim 3 or 4, wherein the virtual object
comprises an avatar, and the first demographic group comprises a demographic group
designated by a participant in the virtual environment located remotely from another
30 participant in the virtual environment, wherein the second demographic group is
designated by the other participant.

6. A behavioural translator as claimed in claim 5, wherein both participants each observe the avatar behaving according the respective designated demographic group simultaneously.

5 7. A behavioural translator as claimed any preceding claim, wherein the information is received as input by the behavioural controller.

8. A behavioural translator as claimed in any preceding claim, wherein the information is to be provided as output by the behavioural controller.

10 9. A behavioural translator as claimed in any preceding claim and arranged to translate at least one of the following behavioural actions:

posture;

tone of voice;

15 gesture;

eye gaze;

object proximity during an interaction between the objects; and

etiquette;

an action representing social status.

20 10. A behavioural translator as claimed in any preceding claim, wherein the object comprises a virtual character in a virtual environment, wherein the translator is arranged to translate the appearance of the virtual character according to a designated demographic group.

25 11. A behavioural translator as claimed in claim 10, wherein the appearance which is translated comprises one or more items of clothing and/or the manner in which an item of clothing is worn by the virtual character.

30 12. A behavioural translator as claimed in any preceding claim, wherein the behaviour is generated using a behavioural controller.

13. A behavioural translator as claimed in any previous claim, wherein said means to receive input is arranged to receive input associated with one or more behavioural actions associated with the first demographic group

5 14. A behavioural translator as claimed in claim 13, wherein said means to process comprises:

means to infer a plurality of behavioural parameter values from said input in accordance with a behavioural framework arranged to generate equivalent behaviour by the object; and

10 means to derive output from the inferred plurality of behavioural parameter values.

15 15. A behavioural translator as claimed in claim 14, wherein said mapping means comprises means to generate said equivalent behaviour by the object by mapping the output derived from the inferred plurality of behavioural parameter values to output which translates the one or more behavioural actions to equivalent behaviour associated with the second demographic group.

20 16. A behavioural translator as claimed in any preceding claim, wherein said equivalent behaviour conveys the same sentiment as the behavioural actions associated with the first demographic group.

25 17. A behavioural translator as claimed in any preceding claim, wherein the equivalent behaviour comprises not performing a behavioural action.

18. A behavioural translator as claimed in any preceding claim, wherein the equivalent behaviour comprises a series of behavioural actions.
demographic group.

30 19. A behavioural translator as claimed in any one of claims 14 to 18, wherein the framework has an internally flexible structure

20. A behavioural translator as claimed any one of claims 14 to 19, wherein the framework comprises a hierarchy of behavioural nodes.

21. A behavioural translator as claimed in any one of claims 14 to 20, wherein the framework is dynamically flexible.

22. A behavioural translator as claimed in any previous claim, input received is associated with a plurality of behavioural actions, and each parameter values inferred for is determined by a combination of said plurality of behavioural action inputs

23. A behavioural translator as claimed in any preceding claim, wherein the behaviour of the object is generated in real-time in response to receiving input associated with a behavioural action.

24. A behavioural translator as claimed in any preceding claim, further comprising a behavioural controller arranged to generate behaviour in an object, wherein said means to receive input comprise means to receive input associated with a behavioural action; said means to process received input comprise means to infer a plurality of behavioural parameter values from said input in accordance with a behavioural framework arranged to generate behaviour by the object; and wherein said means to generate output comprise means to derive output from the inferred plurality of behavioural parameter values, and wherein the translator further comprises means to generate equivalent behaviour by the object using the output derived from the parameter values.

25. A behavioural translator as claimed in claim 24, wherein the means to generate equivalent behaviour comprise means to forward the output derived from the parameter values to an animation system arranged to operate on the output to cause the appropriate behaviour to be animated by the object.

26. A behavioural translator as claimed in claim 25, wherein, said receiving means include means to receive as input at least one parameter value from a source external to the behavioural framework of the object.

27. A behavioural translator as claimed in claim 24 to 26, wherein the means to infer a plurality of behavioural parameter values comprises a framework of nodes, each behavioural node arranged to map at least one input parameter value to at least one
5 output parameter value.

28. A behavioural translator as claimed in claim 27, wherein at least one node is arranged to map at least one parameter value taken from the group including: a parameter defined for each node within the behavioural framework; a parameter defined
10 within each node of the behavioural framework; and, a parameter defined externally to the behavioural framework.

29. A behavioural translator as claimed in any one of claims 14 to 28, wherein said means to receive input is arranged to receive input from a behavioural design interface,
15 the behavioural design interface comprising:

means arranged to allow the assignment of a value to a behavioural parameter set comprising at least one behavioural parameter defined according to the behavioural framework of the object; and

means arranged to operate on the value assigned to the behavioural parameter
20 set by a predetermined function to determine the value of the internal parameter.

30. A behavioural translator as claimed in any one of claims 24 to 29, wherein the behavioural translator is a component in the behavioural controller and comprises a translation element for mapping received input derived from behaviour consistent with a
25 first culture to input consistent with a second culture.

31. A behavioural translator as claimed in any one of claims 24 to 30, wherein the behavioural translator comprises a translation element for mapping behavioural output consistent with a first predefined culture to behavioural output consistent with a second
30 predefined culture.

32. A behavioural translator as claimed in any preceding claim, wherein a user

provides the input to the translator.

33. A behavioural translator as claimed in any preceding claim, wherein a software agent provides the input to the translator.

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34. A device arranged to have a suite of at least one computer programs stored thereon, the suite of at least one computer programs being executable on the device so as to cause the device to function as the translator defined in any one of claims 1 to 33.

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35. A method of translating behaviour in a virtual environment from behaviour conforming to one demographic group to behaviour conforming to another demographic group, wherein perceived behaviour in the virtual environment is generated behaviour for an object under the control of a behavioural controller, the method comprising the steps of:

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receiving input associated with one or more behavioural actions;

inferring a plurality of behavioural parameter values from said input in accordance with a behavioural framework arranged to generate behaviour by the object;

deriving output from the inferred plurality of behavioural parameter values; and

generating equivalent behaviour by the object using the output derived from the

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parameter values; and

translating input which generates a behavioural action according to a first demographic group into equivalent behaviour associated with the other demographic group.

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36. A method of generating behaviour in an object under the control of a behavioural controller comprising a framework of nodes and arranged for use by a behavioural translator as claimed in any one of claims 1 to 33, the method comprising the steps of:

at least one node receiving input associated with a behavioural action;

each said at least one node mapping received input to output;

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inferring a plurality of behavioural parameter values for other nodes in the framework using said output; and

mapping the received input using said inferred behavioural parameter values to

provide output by the behavioural controller which generates equivalent behaviour by the object.

37. A method of generating behaviour in an object under the control of a behavioural controller arranged for use by a behavioural translator as claimed in any one of claims 1 to 33, the method comprising the steps of:

receiving input associated with a behaviour action;

mapping said received input to a set of at least one output values which corresponds to equivalent behaviour by the object;

inferring a plurality of behavioural parameter values from said set of at least one output values in accordance with a behavioural framework arranged to generate behaviour by the object; and

generating equivalent behaviour in the object using said parameter values by loading these into the behavioural controller.

38. A method as claimed in any of method claims 35 to 37, wherein the parameters inferred are time-varying.

39. A suite of one or more computer programs forming a set of instructions which when executed are arranged to cause one or more computer systems to perform any one of the methods of any one of claims 35 to 37.

40. A behavioural translation device for a behavioural controller of an object, the device comprising means to map information representing behaviour conforming to a first culture to behaviour conforming to a second culture.

41. A behavioural translation device as claimed in claim 40, wherein the information is received as input by the behavioural controller.

42. A behavioural translation device as claimed in either claim 40 or 41, wherein the information is to be provided as output by the behavioural controller.